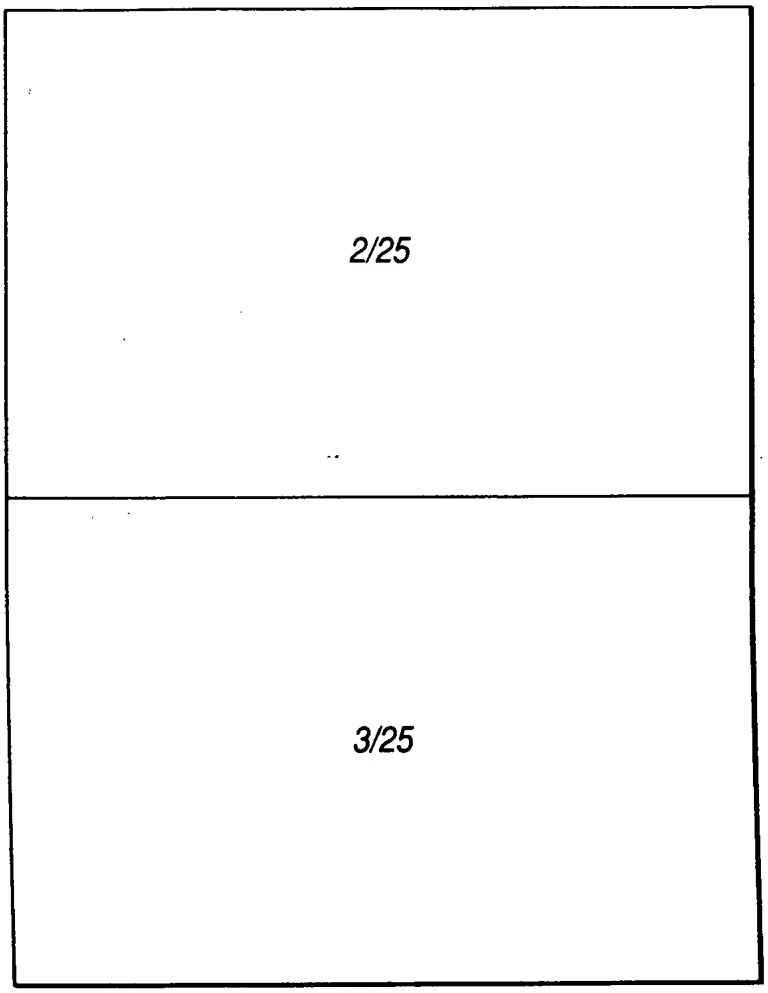


Fig.1A

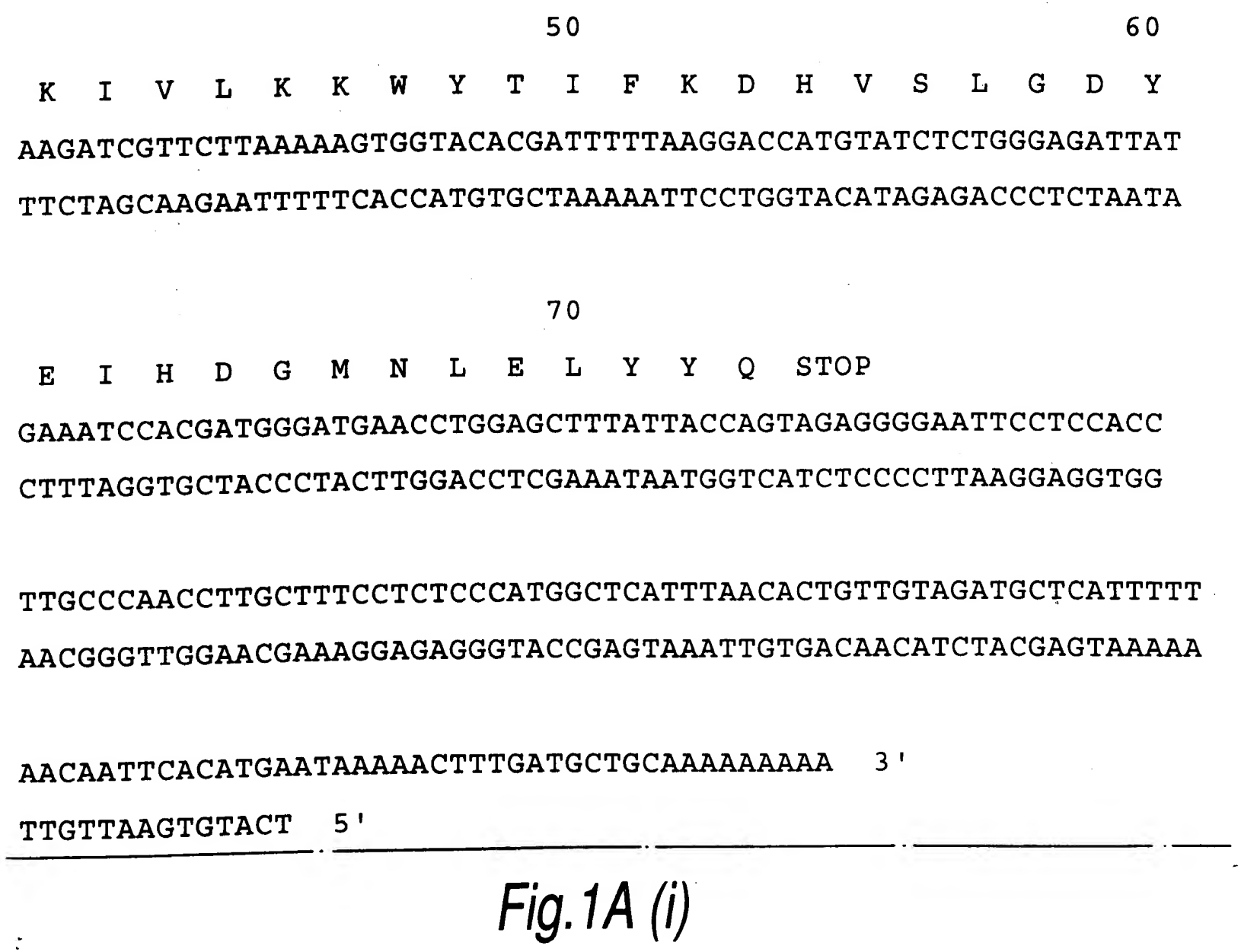


Fig.1A (i)

50 60

K I V L K K W Y T I F K D H V S L G D Y

AAGATCGTTCTTAAAAAGTGGTACACGATTTTTAAGGACCATGTATCTCTGGGAGATTAT

TTCTAGCAAGAATTTTTCACCATGTGCTAAAAATTCCTGGTACATAGAGACCCTCTAATA

70

E I H D G M N L E L Y Y Q STOP

GAAATCCACGATGGGATGAACCTGGAGCTTTATTACCAGTAGAGGGGAATTCCTCCACC

CTTTAGGTGCTACCCTACTTGGACCTCGAAATAATGGTCATCTCCCCTTAAGGAGGTGG

TTGCCCAACCTTGCTTTCCTCTCCCATGGCTCATTTAACACTGTTGTAGATGCTCATTTTT

AACGGGTTGGAACGAAAGGAGAGGGTACCGAGTAAATTGTGACAACATCTACGAGTAAAAA

AACAATTCACATGAATAAAAACTTTGATGCTGCAAAAAAAAA 3'

TTGTTAAGTGTACT 5'

Fig.1A (ii)

```
ATG ATC GAG GTT GTT TGC AAC GAC CGT CTG GGG AAA AAG GTC CNC   45
Met Ile Glu Val Val Cys Asn Asp Arg Leu Gly Lys Lys Val Xaa
  1               5                  10                  15

GTT AAA TGC AAC ACG GAT GAT ACC ATC GGG GAC CTT AAG AAG CTG   90
Val Lys Cys Asn Thr Asp Asp Thr Ile Gly Asp Leu Lys Lys Leu
             20                  25                  30

ATT GCA GCC TAA                                           102
Ile Ala Ala *
```

Fig.1B

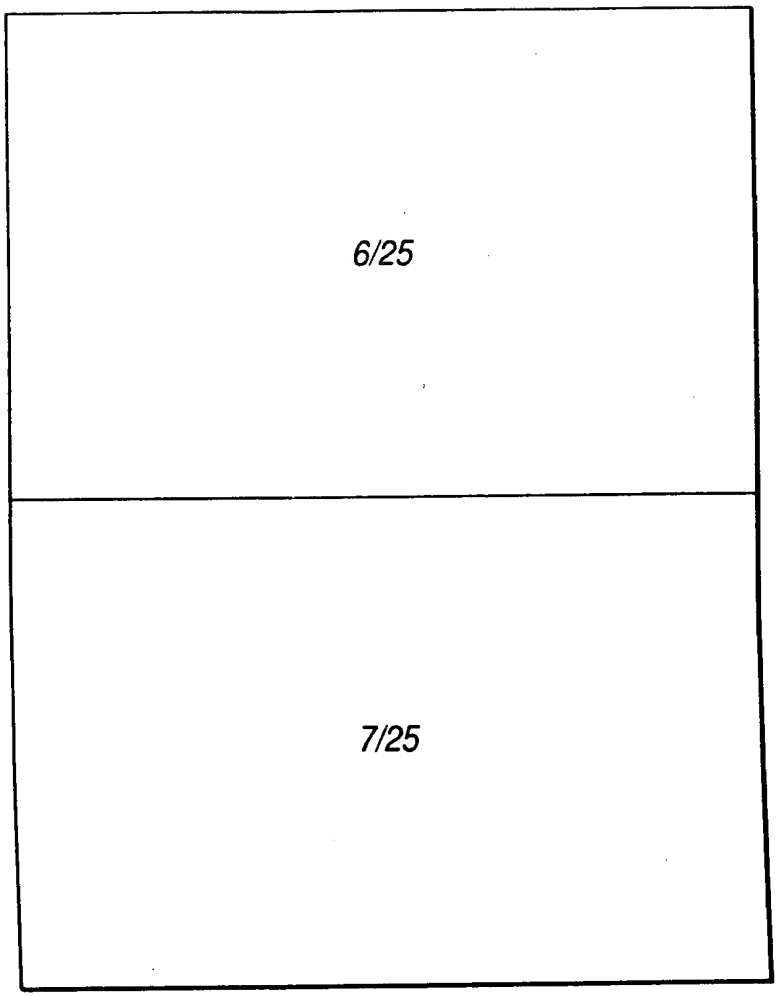


Fig.2A

AMINO ACID ALIGNMENTS

A.

```
                    10         20         30         40         50
                    *          *          *          *          *
Beacon      MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
Human       MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
Mouse       MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
C.elegans   MIEITVNDRLGKKVRIKCNPSDTIGDLKKLIAAQTGTRWEKIVLKKWYTI
F.hepatica        DRLGKKVRVKCNPTDKVGDLKKLIAAQTGTAPERIVLKKWYTI
Rice        MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
S.cerev     MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
```

Fig.2A (i)

```
                    60        70
                     *         *
Beacon      FKDHVSLGDYEIHDGMNLELYYQ
Human       FKDHVSLGDYEIHDGMNLELYYQ
Mouse       FKDHVSLGDYEIHDGMNLELYYQ
C.elegans   YKDHITLMDYEIHEGFNFELYYQ
F.hepatica  YKDHVTLRDYEINDGMNLELYYQ
Rice        YKDHITLADYEIHDGMGLELYYN
S.cerev     LKDHICLEDYEVHDQTNLELYYL

Percentage  homologies
Human         73/73 = 100%
Mouse         73/73 = 100%
C.elegans     59/73 = 81%
F.hepatica    54/66 = 82%
Rice          58/73 = 79%
S.cerev       46/73 = 63%
```

Fig.2A (ii)

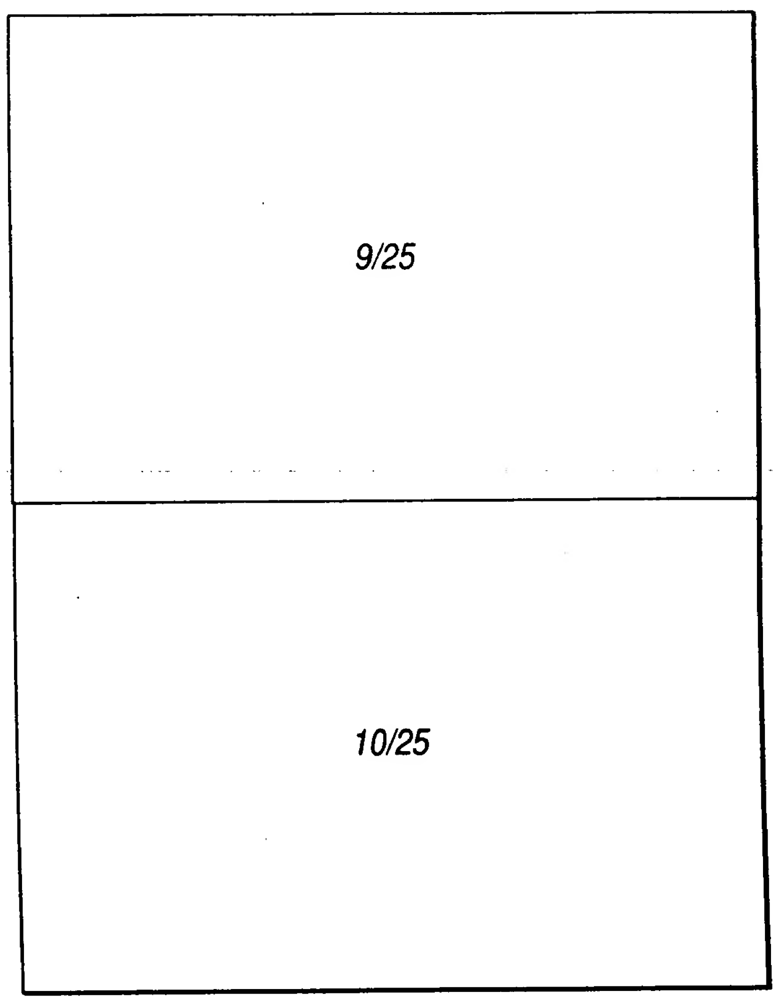


Fig.2B

B.

Human ubiquitin

```
                    10        20        30        40        50
                    *         *         *         *         *
Beacon      MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
             | |       || + ++    ||| ++|  |  + |   ++  |
Ugiquitin   MQIFVKT  LTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLIFAGKQ

                    60        70
                    *         *
Beacon      FKDHVSLGDYEIHDGMNLELYYQ
             +|  +| ||+|      | |
Ubiquitin   LEDGRTLSDYNIQKESTLHLVLRLRGG
```

Amino acid homology 18/73 = 25%

Positives (similar amino acids) 29/73 = 40%

Fig.2B (i)

Ubiquitin-like protein 8 (A. thaliana)

```
                  10        20        30        40        50
                  *         *         *         *         *
Beacon      MIEVVCNDRLGKKVRVKCNTDDTIGDLKKLIAAQTGTRWNKIVLKKWYTI
                 ||  +  ++   +  |||  ++|+  |   +  |    ++  +|   +
A. thaliana           GKTIILEVESSDTIANVKEKIQVKEGIKPDQQMLIFFGQQ

                  60        70
                  *         *
Beacon      FKDHVSLGDYEIHDGMNLELYYQ
             +|  |+||||+||     | |
A. thaliana LEDGVTLGDYDIHKKSTLYL
```

Amino acid homology 19/60 = 32%

Positives (similar amino acids) 34/60 = 57%

Fig.2B (ii)

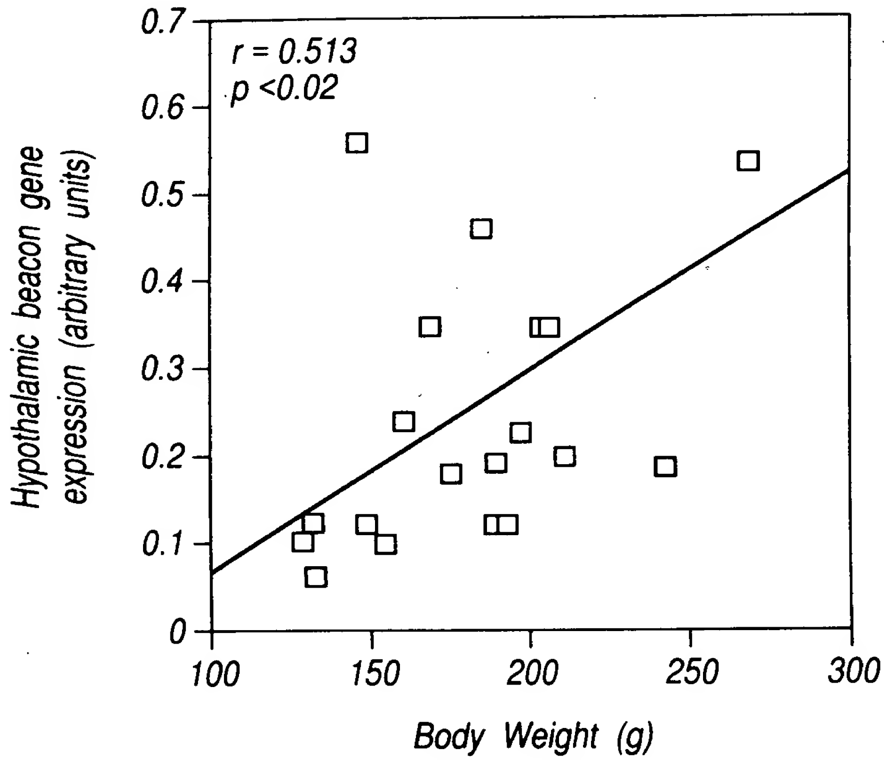


Fig.3A

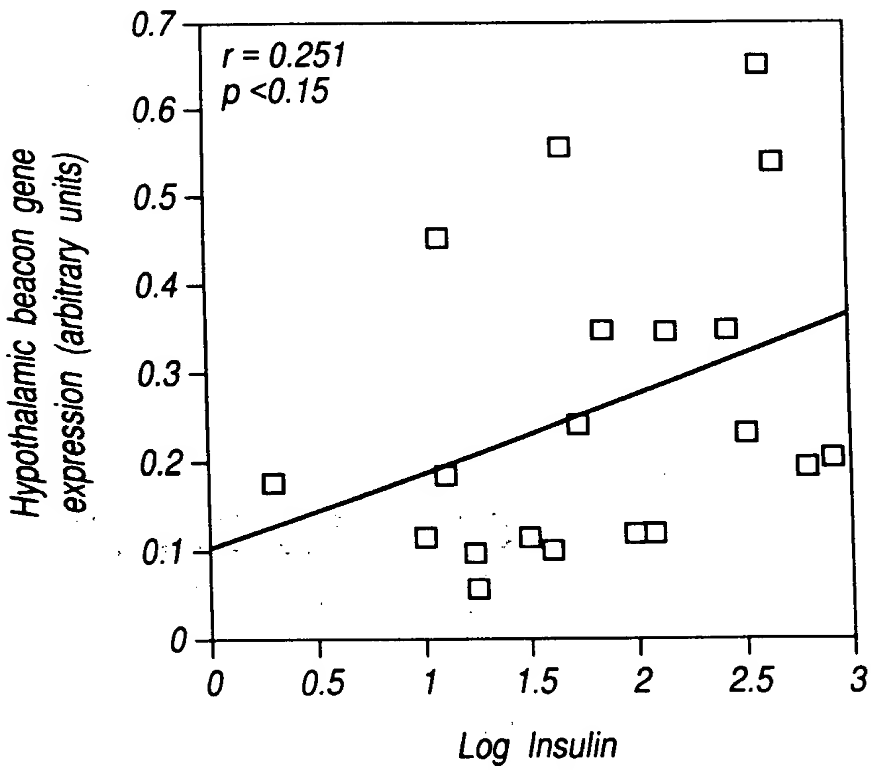


Fig.3B

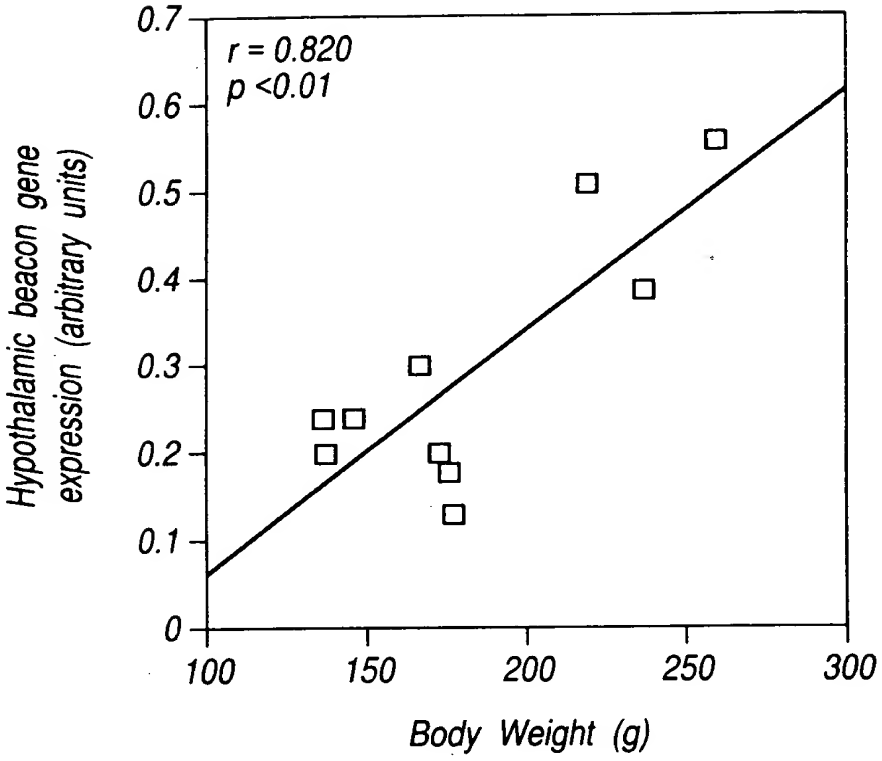


Fig.4A

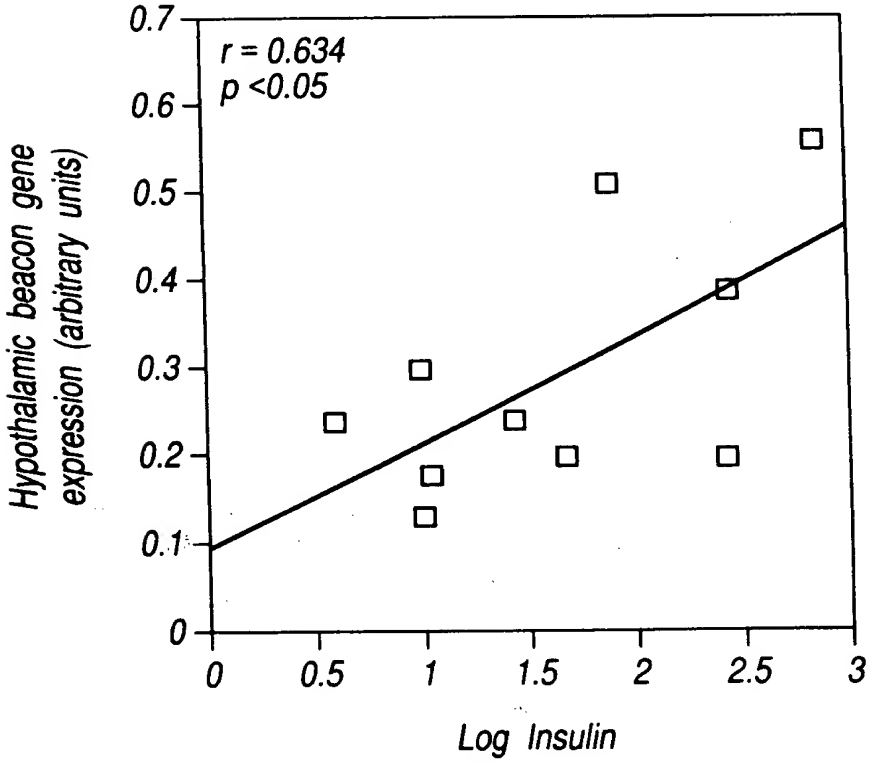


Fig.4B

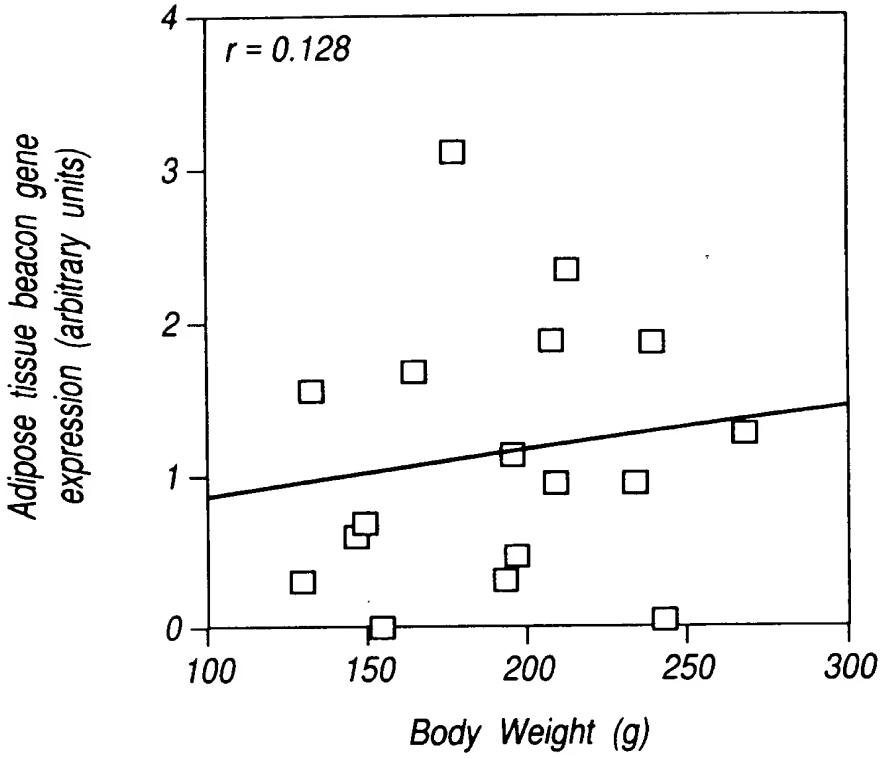


Fig.5A

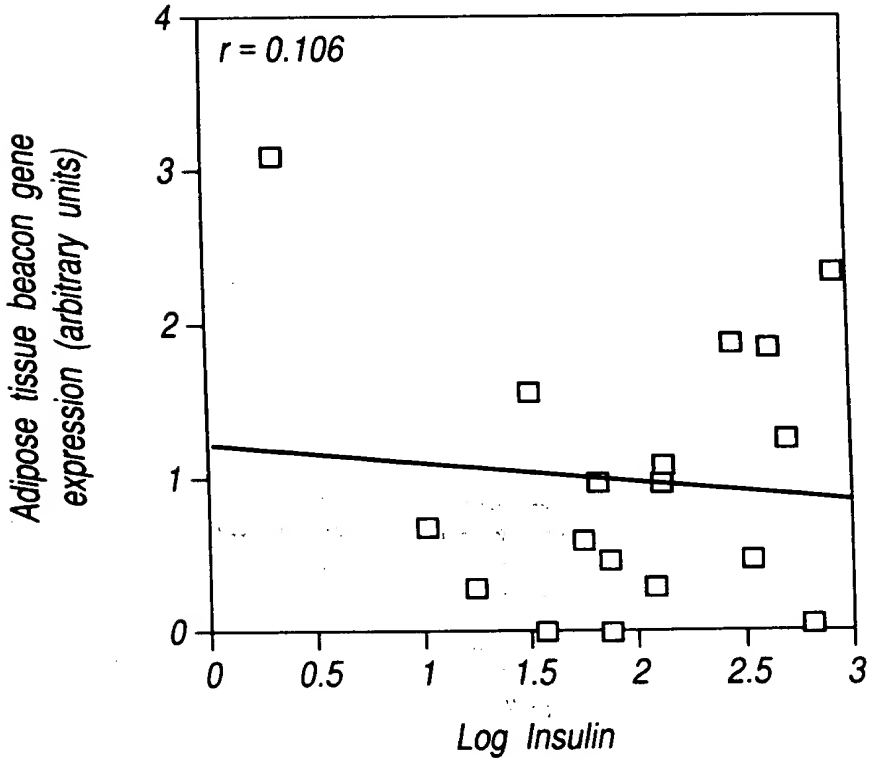


Fig.5B

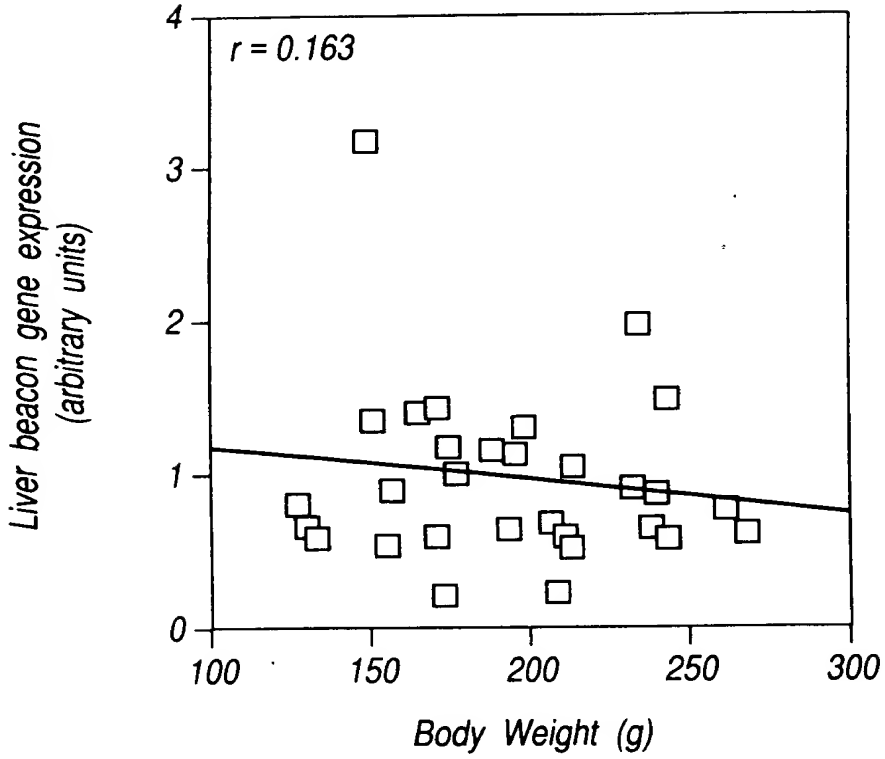


Fig.5C

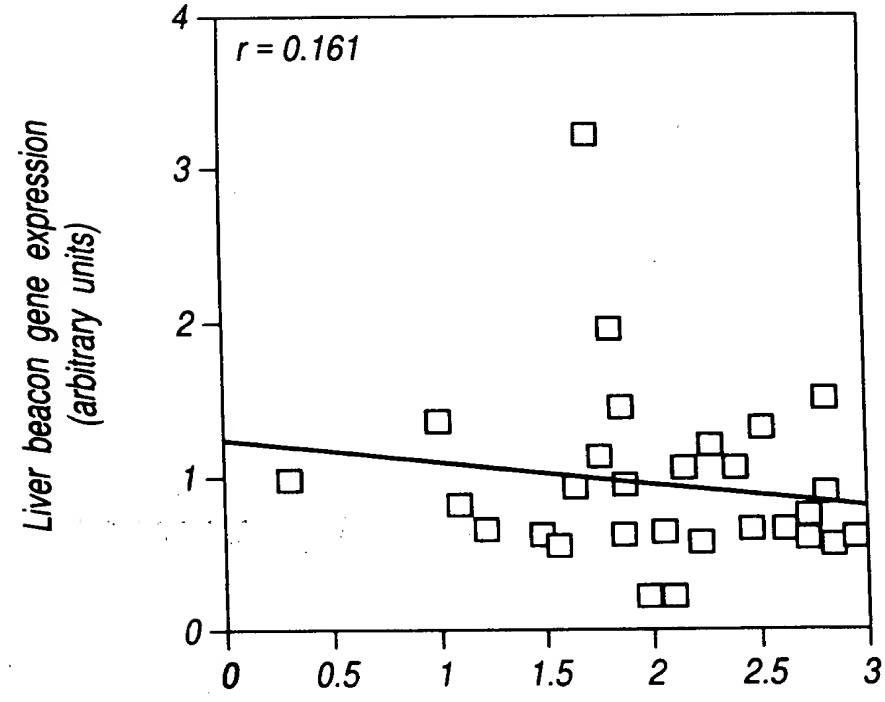


Fig.5D

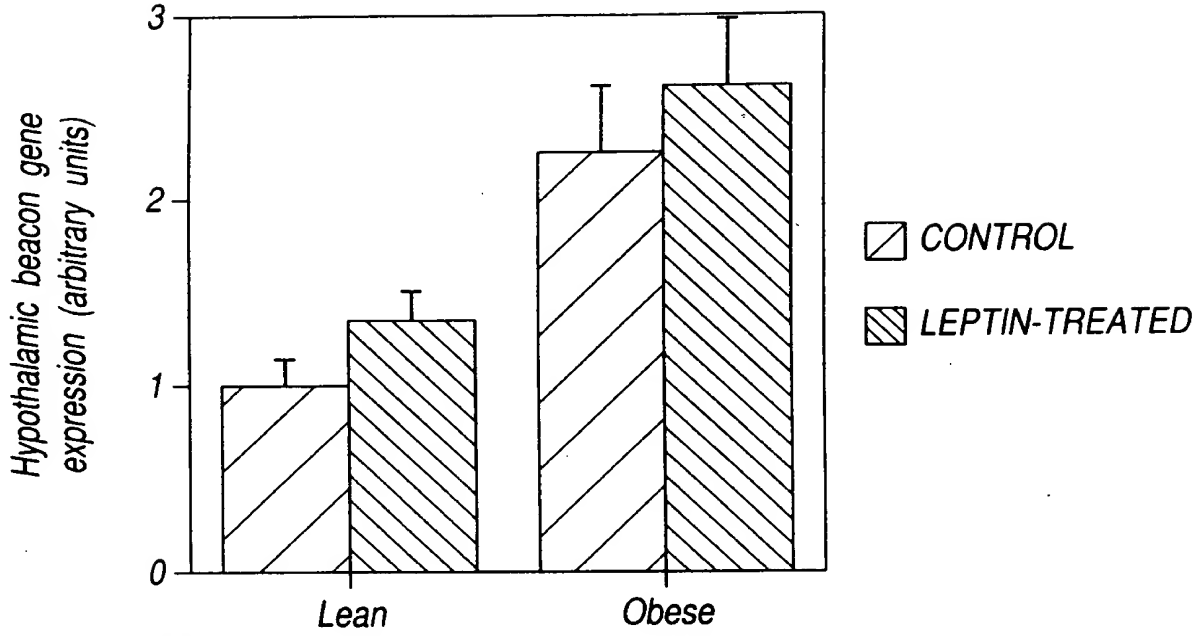


Fig.6

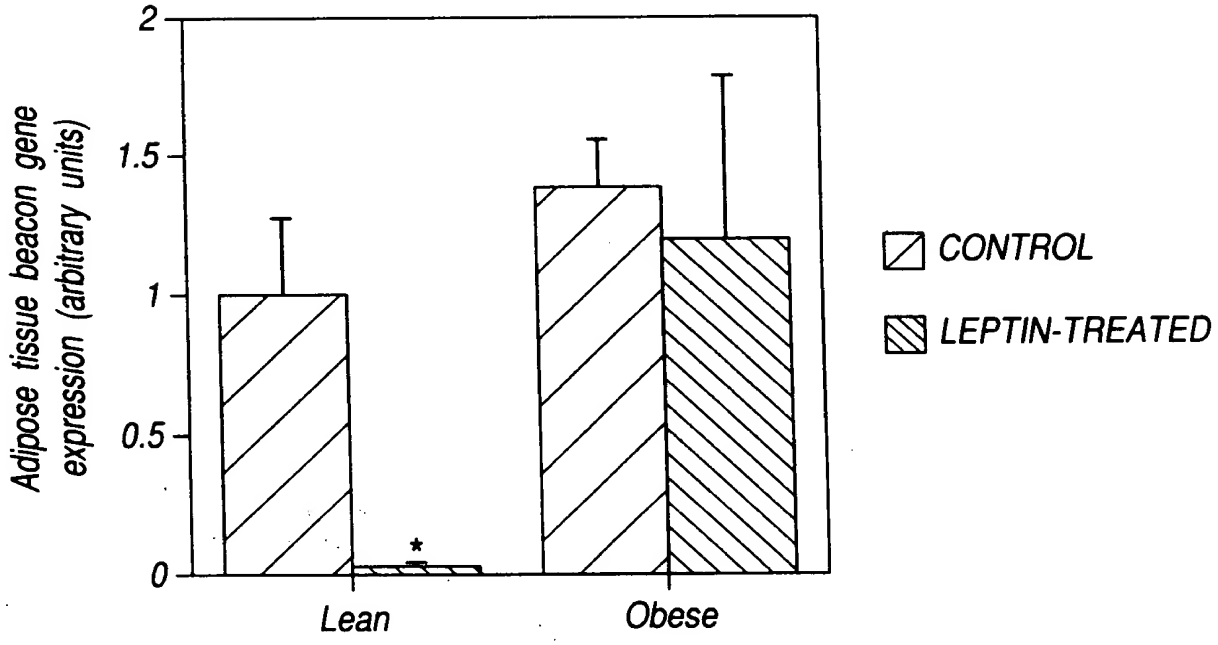


Fig.7

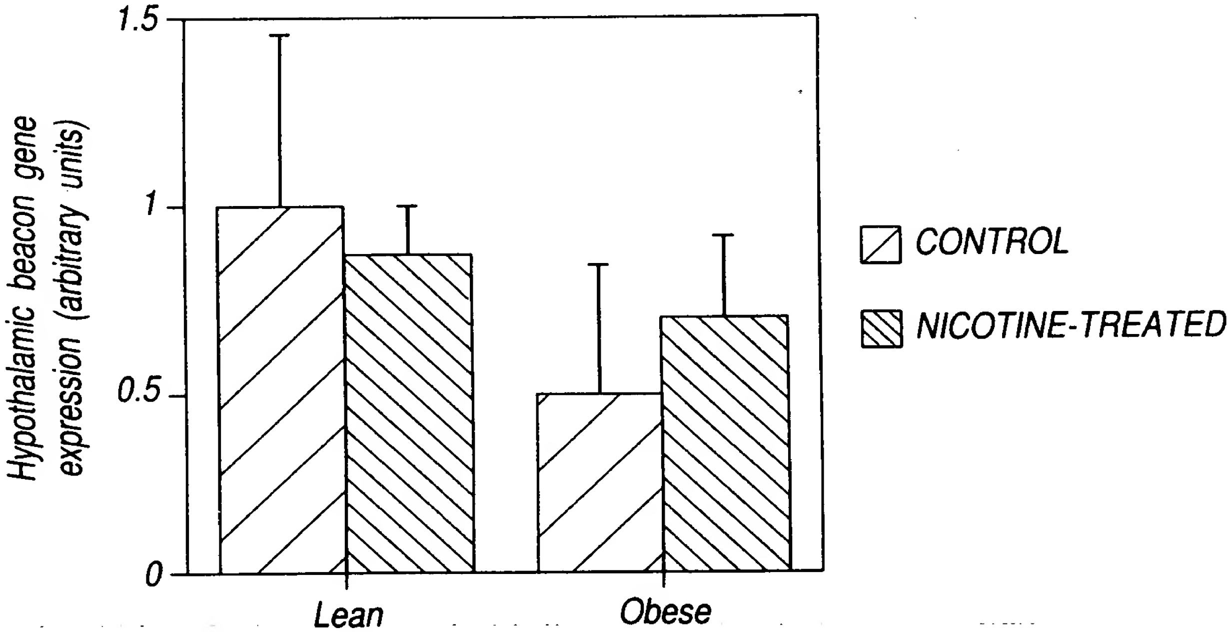


Fig.8A

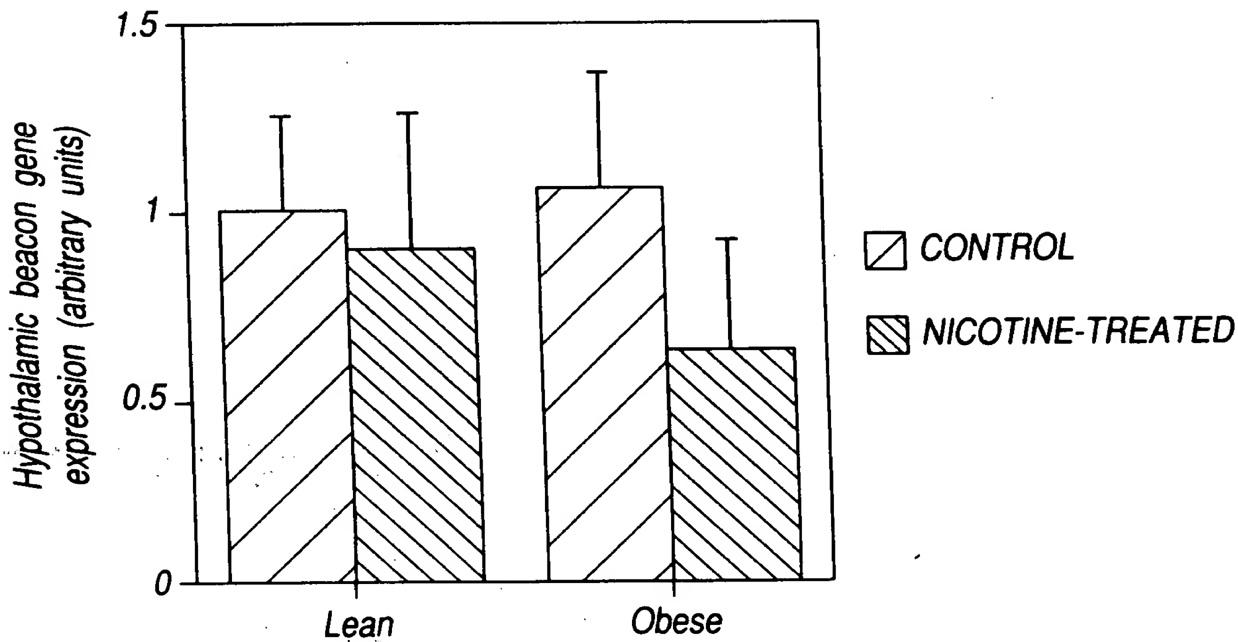


Fig.8B

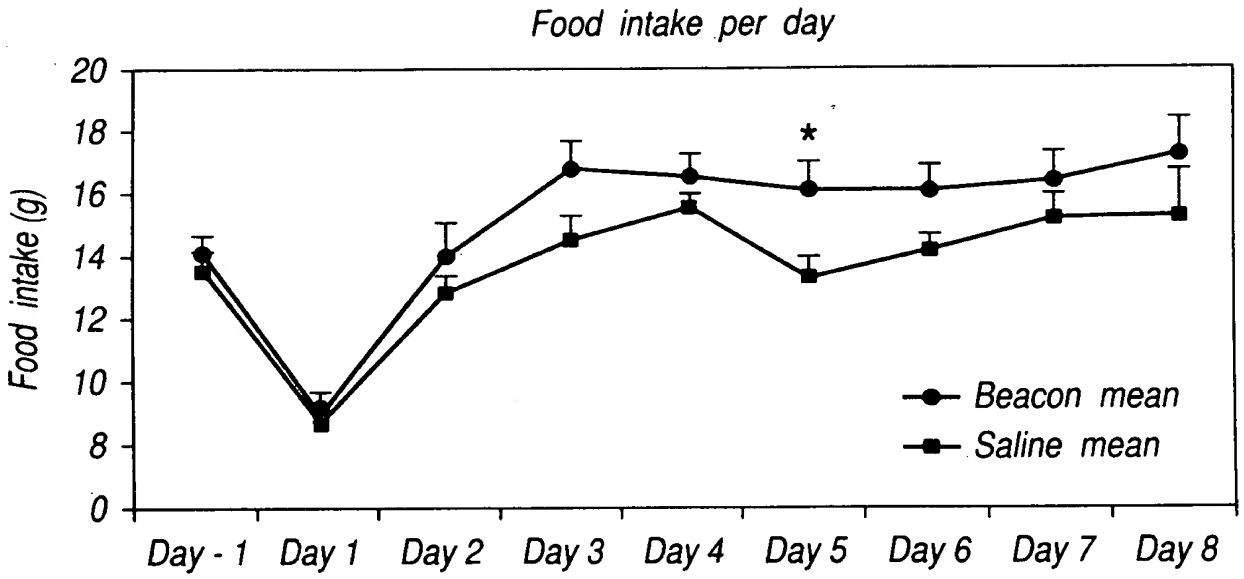
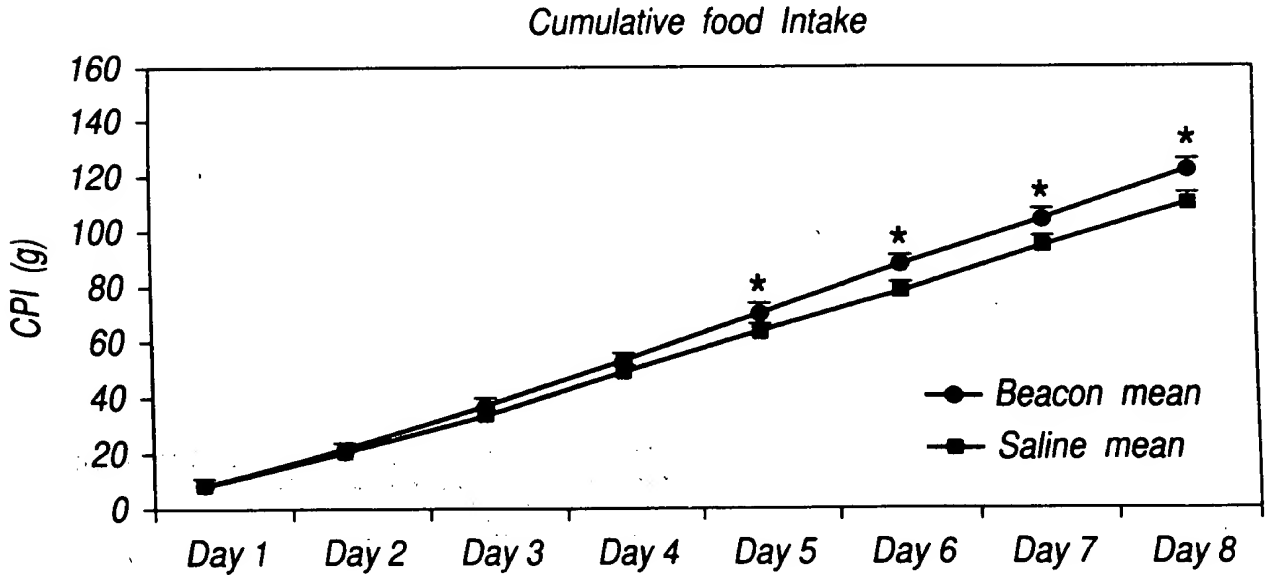


Fig.9A



* = significant, $p<0.05$

Fig.9B

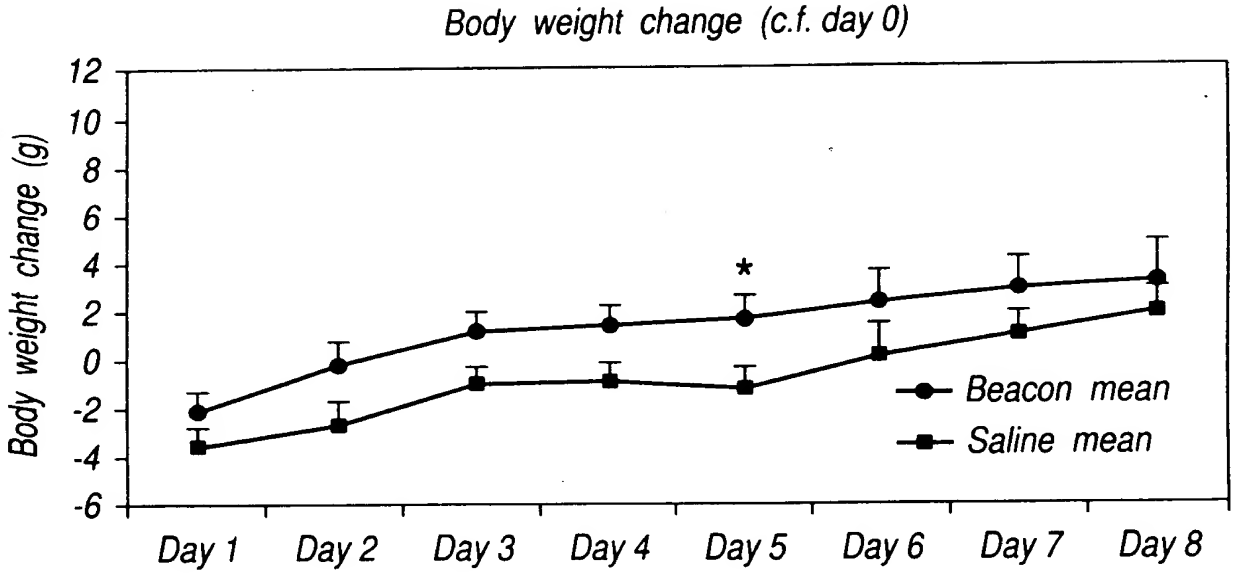


Fig.9C

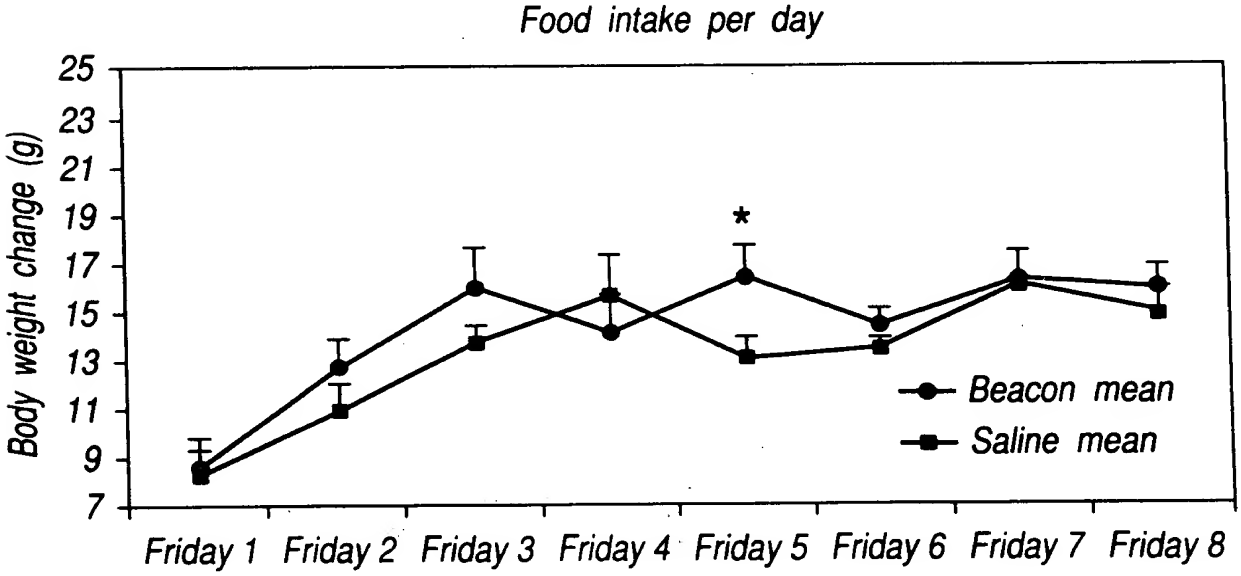


Fig.10A

* = significant, $p<0.05$

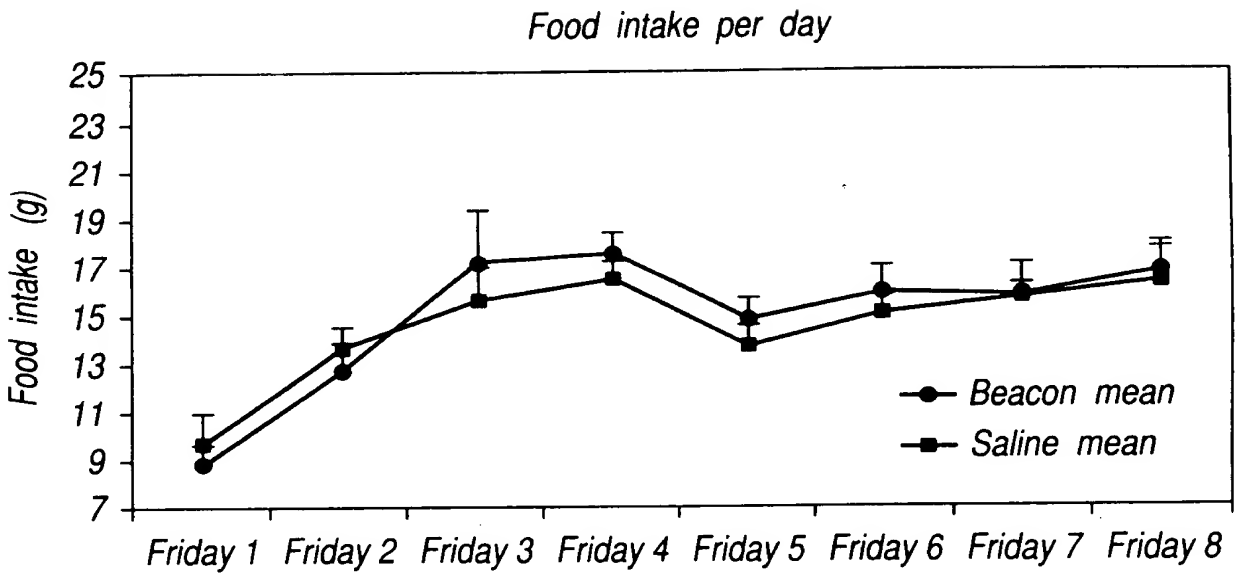


Fig.10B

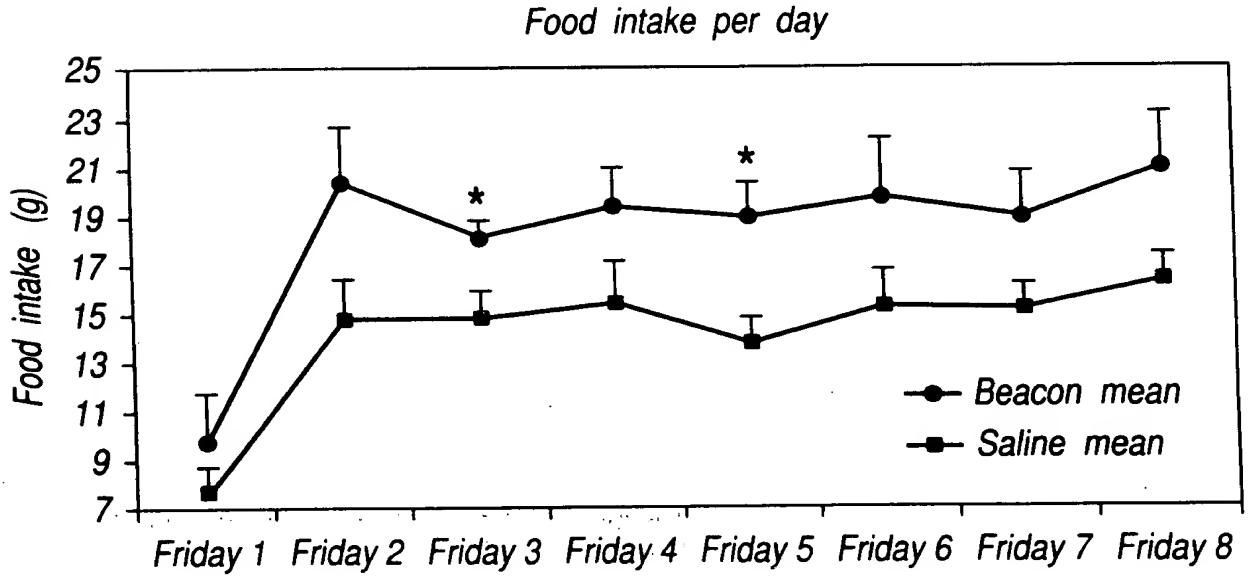


Fig.10C

* = significant, $p<0.05$

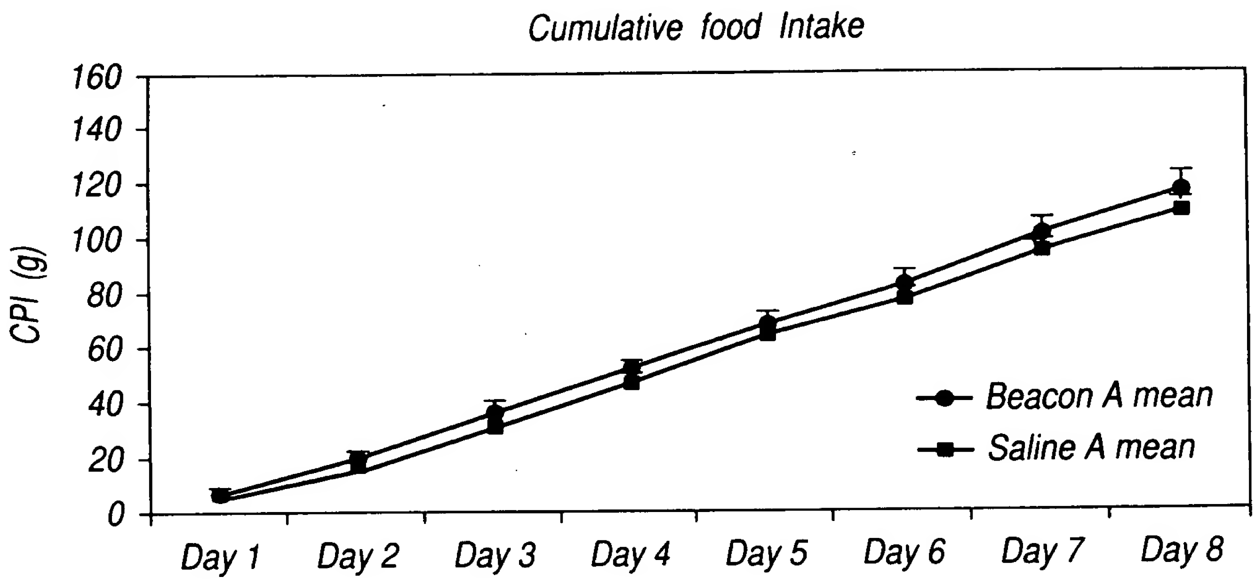
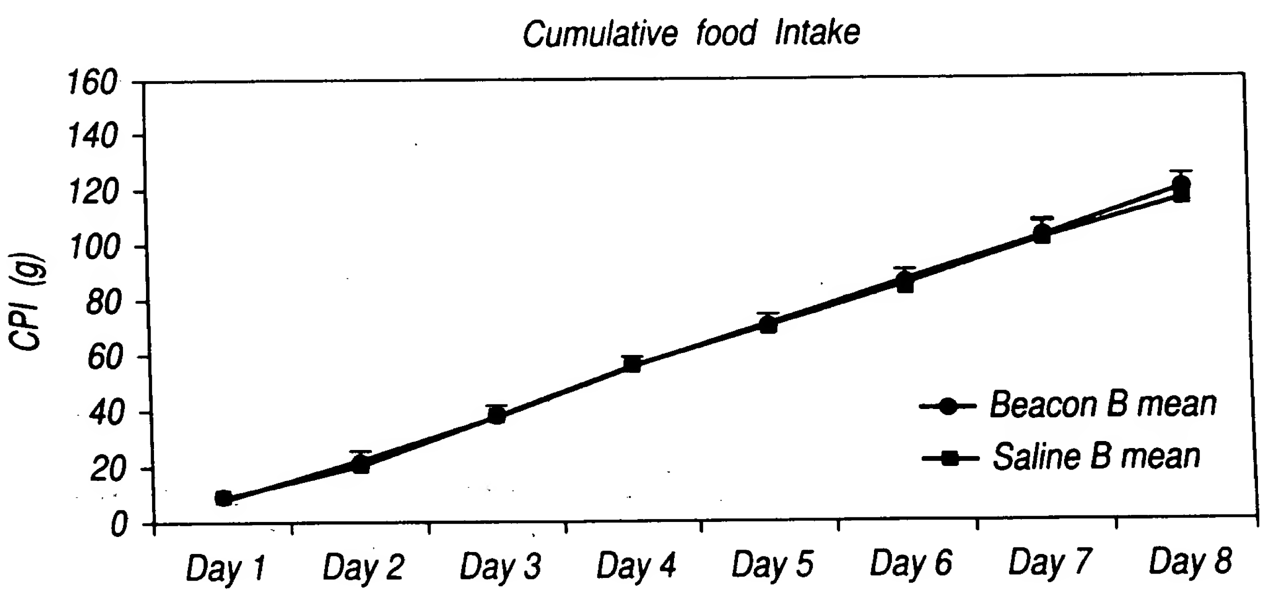


Fig.11A



* = significant, $p<0.05$

Fig.11B

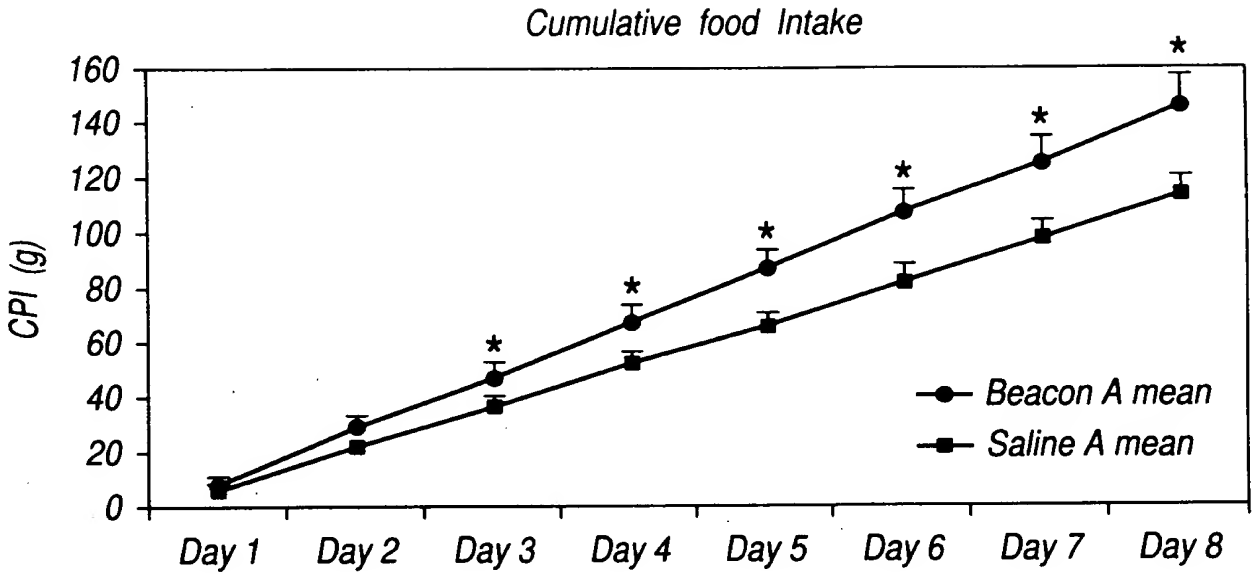


Fig.11C

Beacon v. Body Weight and % Fat in Group A animals

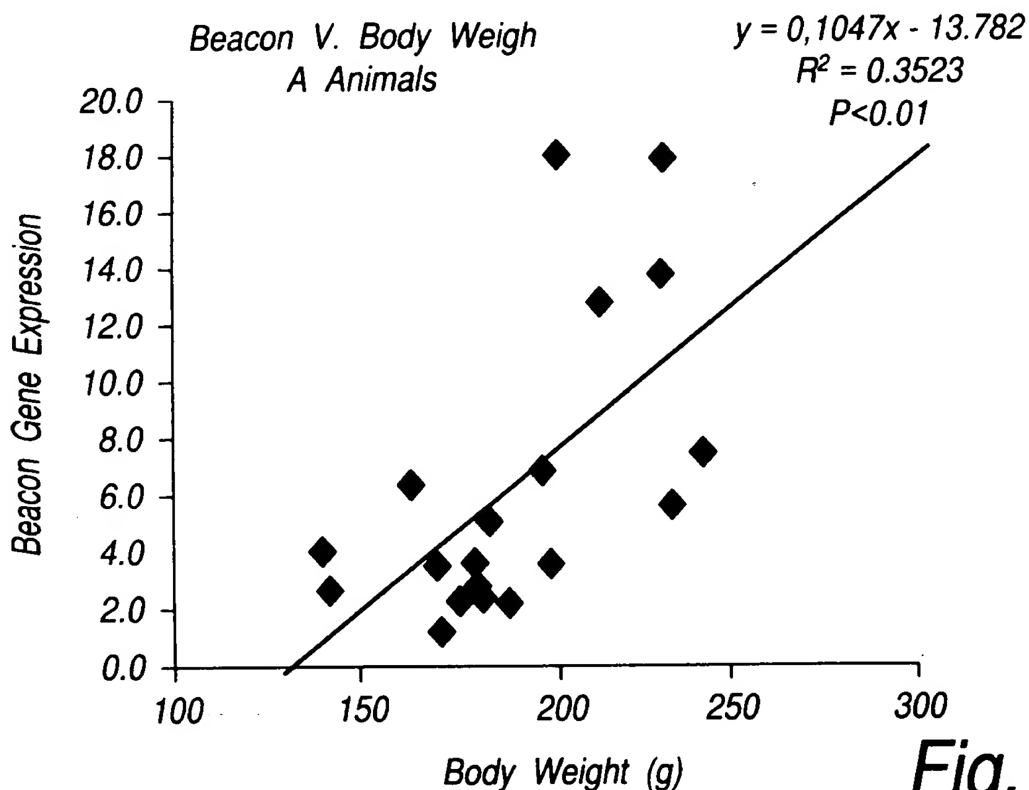


Fig.12A

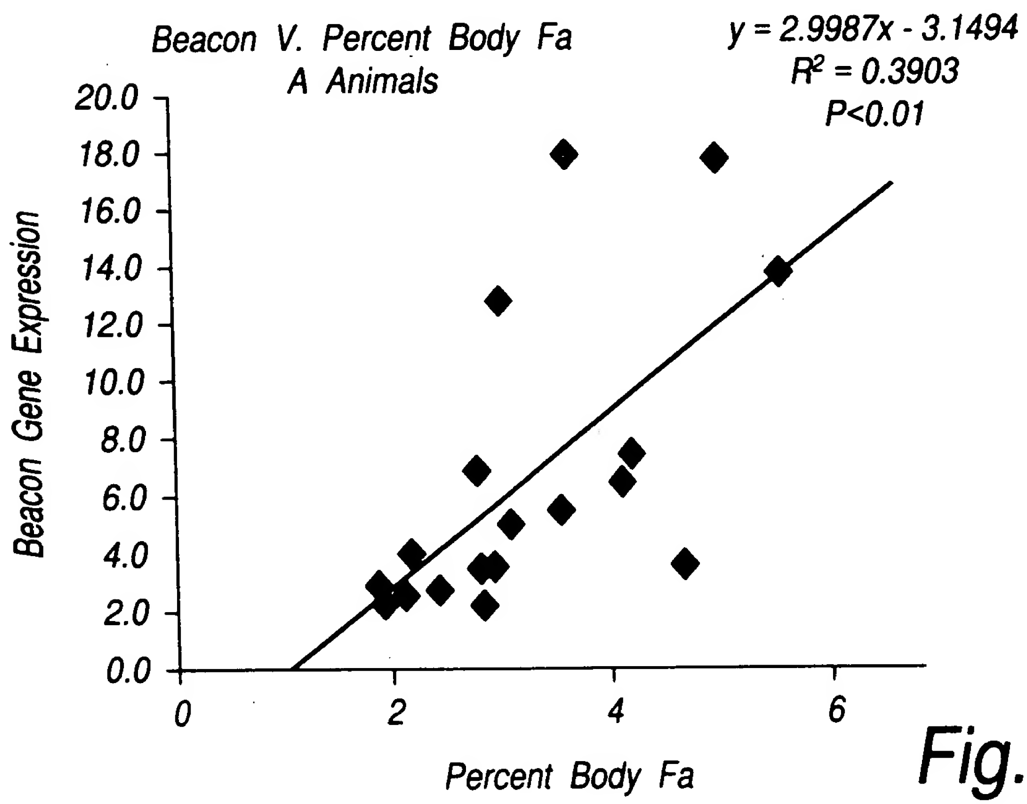


Fig.12B

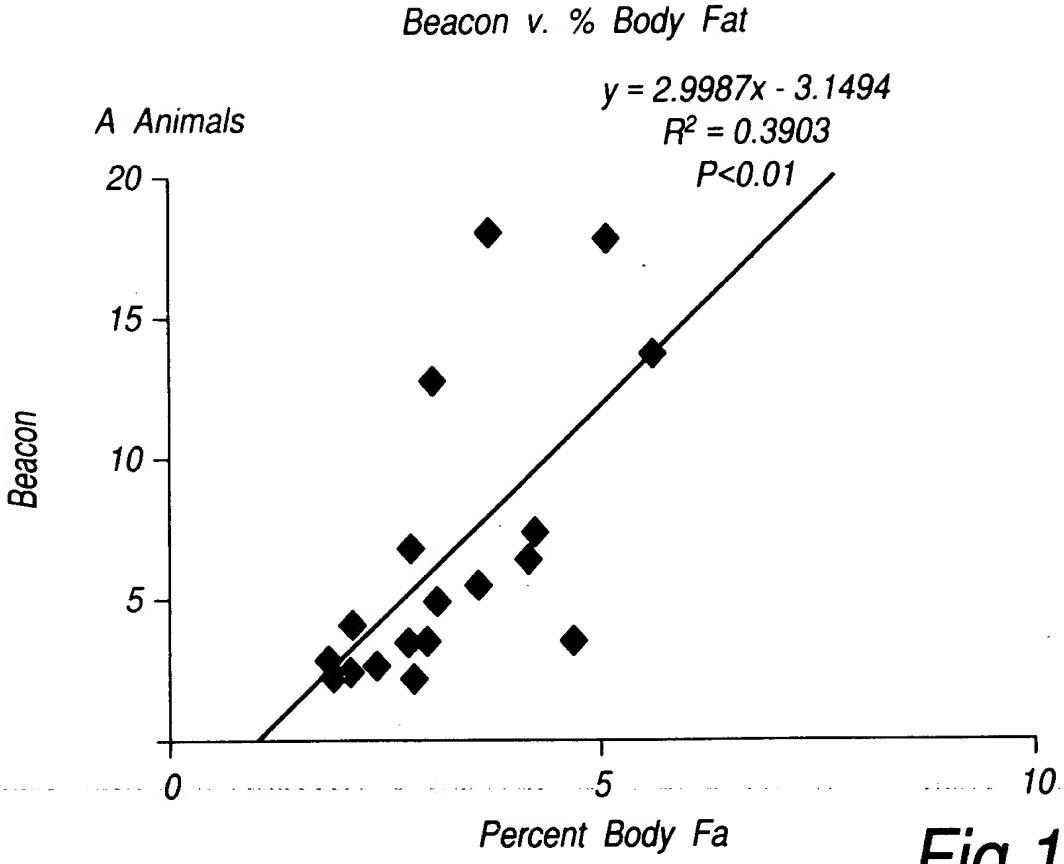


Fig.13A

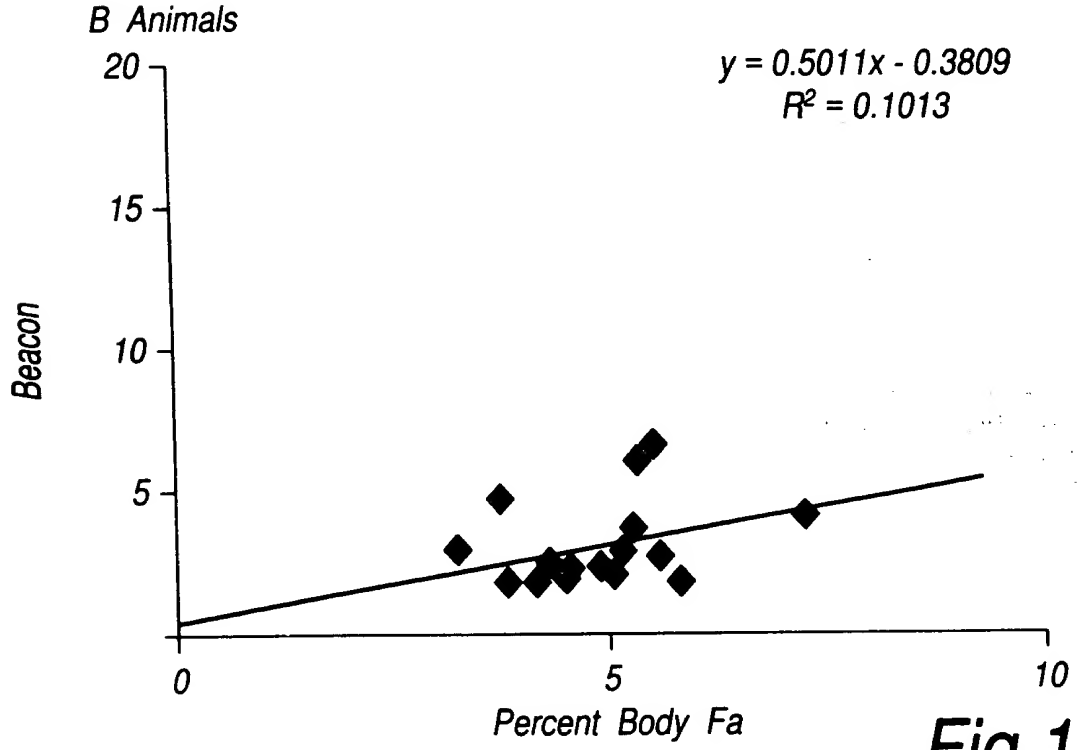


Fig.13B